Linguistic Challenges in Learning Chinese Measure Words: Insights from Zambian L2 Learners

汉语量词习得中的语言挑战：基于赞比亚二语学习者的启示

[Zambia] James ZULU[1]
College of Literature and Journalism, Sichuan University, China
jzulu2464@gmail.com

DOI: http://doi.org/10.5281/zenodo.16629602

Abstract For over a decade, Chinese language education has existed in Zambia. A key challenge for Zambian students learning Chinese is mastering Chinese measure words, such as 个 (gè), 只(zhī), 群 (qún), and 辆 (liàng), which are essential for precise communication. Research surveyed 30 students (HSK levels 3-5) on four common measure words. Findings showed students struggle due to differing meanings and uses compared to their native languages. Consequently, they often replace or omit these words in their Chinese. The paper suggests that instructors must understand students' first languages. This understanding is crucial for developing effective teaching methods for Chinese measure words. Tailored strategies can then address specific linguistic differences, improving acquisition.

Key Words Chinese Measure Word; Zambian L2 Learners; Linguistic Challenges

1. Introduction

The role of measure words in second language learning and teaching is significant, as they bridge numerals and nouns to quantify actions. Allen (1977) defined a measure word as a morpheme denoting salient characteristics of an associated entity. Zheng (2014) further clarified that these words express the relationship between numerals/demonstratives and nouns/verbs for counting items and actions. Essentially, measure words illustrate connections between different parts of a phrase or sentence, linking nouns, verbs, and numerals. Liu (2021) emphasized that Chinese measure words are a unique aspect of the language's vocabulary, contributing to its colorful and distinctive expression. Therefore, understanding and mastering measure words is crucial for second-language learners to accurately and fluently express quantity and relationships in the target language.

Allen (1977) defines a measure word as "a morpheme which denotes some salient perceived or imputed characteristics of the entity to which it is associated." The significance of measure words in second language learning and teaching is considerable because they articulate the connection between numerals and nouns when quantifying actions. Zheng (2014) similarly notes that "measure

Author: [1] Zulu James (祖鲁), a PhD candidate of Chinese International Education at Sichuan University and a Zambian young Sinologist.

words express the relationship between numerals/demonstratives and nouns/verbs to count the items and actions." Essentially, measure words illustrate the relationship between different linguistic elements, connecting nouns, verbs, and numerals within a phrase or sentence. Liu (2021) contends that Chinese measure words are not merely a distinctive component of Chinese vocabulary but also contribute to the language's vibrant and unique expression.

When learning Chinese as a second language, students often struggle with measure words due to significant differences in meaning and usage compared to their first language. This difficulty is expected, considering English belongs to the Indo-European family, while Chinese is a part of the Sino-Tibetan family. Consequently, Zambian learners may encounter challenges in acquiring these grammatical elements. Second language acquisition theory suggests that a student's native language influences their learning process, potentially causing interference. Therefore, the distinct nature of measure words in Chinese, absent or differently structured in English and Zambian languages, presents a notable hurdle for learners. Based on second language acquisition theory, Mushangwe, Musoni (2014) argue that students learning Chinese will likely be influenced by their first language.

This paper examines the linguistic challenges that Zambian second language (L2) learners face when learning to master Chinese measure words. The study's findings are expected to significantly benefit both learners and teachers of Chinese as a second language. Ultimately, this research aims to enhance the overall learning and teaching experience.

2. Background

According to the Ministry of Education (2013), the Zambian education framework introduced the study of the Chinese language in 2014. However, the perception exists that various factors, including economic, social, and family background, influence the acquisition of foreign languages. Zhong, Muyunda, and Cheng (2021) also assert that successful second language acquisition depends on learners' beliefs about the language, aptitude, achievement expectations, and teaching methodology.

Measure words hold significant importance in Chinese, permeating daily conversations and reflecting proficiency in vocabulary and usage. While vocabulary acquisition is a gradual process in second language learning, as Zimmerman (1997) notes, its historical undervaluation measure words uniquely bridge numbers with both nouns and verbs. Therefore, their role in second language learning and teaching cannot be overlooked. Mastering measure words enhances both grammatical accuracy and nuanced expression in the Chinese language.

Measure words are essential in the Chinese language because they make a noun or verb clear and definite; for example, if we say 'I have a pencil/我有一支笔(wǒ yǒu yī zhī bǐ)', we know that I have one pencil because of the word 'a' used in English and '一支(yī zhī)' used in Chinese. Furthermore, we may also say that "we have herds of cattle at home/我家有一群牛(wǒ jiā yǒu yī

qún niú)". From these two sentences, we can say that we have a lot of cattle at home because of the measure word "herd" in English and "群 (qún)" in Chinese. Therefore, if a student is unable to use measure words properly, we may conclude that he/she is yet to acquire or master the Language fully.

In the 21st century, numerous studies have investigated the influence of a student's first language on second language acquisition. For instance, Wirth's (2007) research on second language acquisition, based on cultural frameworks and sociocultural theory, examined American and Spanish students. The findings indicated that language encompasses dynamic constellations of sociocultural resources deeply connected to social and historical contexts. Similarly, Wang (2016) revealed practical principles for teaching measure words. Firstly, concrete and abstract measure words should be approached differently in instruction. Secondly, varying teaching strategies should be employed for students with different levels of Chinese proficiency. Thirdly, analyzing semantic features and offering visual aids proves helpful when teaching concrete measure words.

On the other hand, some researchers argue that there are no measure words in English. However, Liu (2000) argues that English has Measure words too, though not as rich as those of the Chinese language, for example:

a) I want three loaves of bread.
   The word 'loaves' is a measure word
   我要三袋面包(wǒ yào sān dài miànbāo)
   Analysis: '袋(dài)' is a measure word

b) She has three sheets of paper.
   "Sheet" is a measure word
   她有三张纸(tā yǒu sān zhāng zhǐ)
   Analysis: '张 (zhāng)' is a measure word

Azza (2017) also researched the acquisition of Chinese grammar by Egyptian students and stated that "Chinese measure words acquisition possess a challenge for the students, and the most used measure word was 个(ge)," for example:

1. 我家有个妈妈，有个爸爸，有个姐姐
   (wǒ jiā yǒu gè māma, yǒu gè bàba, yǒu gè jiějie)/Wrong sentence
2. 我家有妈妈，有爸爸和姐姐 // 我家有爸妈和姐姐
   (wǒ jiā yǒu māma, yǒu bàba hé jiějie or wǒ jiā yǒu bà mā hé jiějie)/as the correct sentence.

Nurse and Philippson (2006) also pointed out that most Indo-European languages have fewer measure words. Thus, when some Chinese measure words are translated into English, they happen as inflections rather than words, and many Chinese measure words have no equivalent word in English. Hence, this may make it difficult for students whose first language is English to acquire

Chinese measure words. For example;

a) I have **a** dog and **a** cat.

我有一只狗和一只猫(wǒ yǒu yī zhī gǒu hé yī zhī māo)

Analysis: The measure word '只(zhī)' is not reflected in English

b) I am Zambian.

我是一个赞比亚人(wǒ shì yī gè zànbǐyà rén)

Analysis: The measure word '个(gè)' is not reflected in English

Hong (2008) conducted a study on the error analysis of measure words in second language acquisition. The research highlighted several key aspects regarding Chinese measure words, which I refer to as the "formula for Chinese measure words":

a) 数+量词+名词 (shù + liàngcí + míngcí)

Number + Measure word + Noun

b) 动词+数+量词 (dòngcí + shù + liàngcí)

Verb +Number + Measure word

Furthermore, English measure words may also express the plural of a noun or verb; the noun or verb may also be plural on its own. Chinese language measure words may not show that relationship. For example;

c) 我有三杯水(wǒ yǒu sān bēi shuǐ)

I have two cups of water.

In English, the measure word "cup(s)" indicates plurality, whereas in Chinese, the measure word does not inherently convey the plural form of a noun. Instead, a number must be added before the measure word to indicate plurality in the Chinese language.

d) 我有三支笔(wǒ yǒu sān zhī bǐ)

I have three pens.

English measure words are not explicitly present, but nouns are marked with an "s" to indicate plurality. From the above background, English measure words differ significantly from their Chinese counterparts. According to the "Mandarin Standard Book" (2016), there are 45 frequently used measure words in Mandarin. For this analysis, this paper will focus on four commonly used Chinese measure words, namely:

个(gè), 只(zhī), 群(qún), 辆(liàng)

The above measure words are used in daily Chinese conversations and can be likened to the two commonly used English articles, "a" and "an". The question now is whether Zambian learners will acquire various Chinese measure words.

3. Research questions

There are a lot of theories in the field of second language acquisition. However, this research's hypothesis is drawn from the language transfer theory. According to Dulay et.al (1982), cited by Musona and Mushangwe (2014), interference refers to the automatic transfer, due to habit, of the surface structure of the first language onto the surface of the target language. Based on this theory, the assumption is that Zambian second language learners (L2) of the Chinese language should exhibit the interference of their first language (English).

Therefore, in this paper, we endeavor to answer the following questions:

1. What are the challenges that Zambian learners face when acquiring Chinese measure words?
2. What could be the errors that Zambian learners make when acquiring Chinese measure words?
3. Where do these errors emerge from?

4. Methodology

This study employed a qualitative research design, as the term encompasses various methods, perspectives, and approaches (Alison & Susan, 2005). Qualitative research aims to examine individuals and events within their natural contexts (Tetnowski & Damico, 2001). Aspers and Corte (2019) define it as an iterative process of analyzing empirical data to enhance scholarly understanding of a phenomenon. Consequently, data for this research were collected from 30 Chinese language students (HSK level 3-5) aged 18 to 35, focusing on linguistic challenges in learning Chinese measure words by Zambian L2 learners and potential corrective strategies. The survey utilized four commonly used measure words: 个(gè), 只(zhī), 群(qún), 辆(liàng). Analyzing student responses revealed 9 frequently occurring erroneous sentences associated with specific measure words. Adhering to error analysis principles, each incorrect sentence underwent scrutiny, categorized by: the incorrect phrase, the correct alternative, the error type, a detailed description of the error, and its percentage of occurrence. Subsequently, potential causes for these errors were explored. Error Analysis (EA), as defined by the *Longman Dictionary of Language Teaching and Applied Linguistics* (1998), investigates the errors second language learners make. Consequently, this survey aimed to identify the difficulties learners encounter when acquiring measure words, the types and prevalence of errors they make, and the possible underlying reasons for these mistakes. To achieve this, a questionnaire was developed requiring participants to translate English phrases and sentences into Chinese and to construct their own using four designated measure words.

5. Data and result analysis

The data for this paper originated from a questionnaire comprising two sections: translation and sentence construction. The translation section involved translating English sentences or phrases, while the sentence construction section required students to create sentences using given measure

words. The first part contained twelve questions, and the second part included four, totaling sixteen questions. Results from the first part indicated that learners could translate eight out of twelve sentences correctly. This outcome was not unexpected, as some students possessed over two years of Chinese language study, suggesting their acquired knowledge facilitated the translations. Nevertheless, some students struggled with the appropriate use of measure words such as 辆 (liàng)，群 (qún)，and 只 (zhī) in their translations from English to Chinese. Here are some of the responses done by the students:

1. 办公室外有一群大学学生们 (bàngōngshì wài yǒu yī qún dàxué xuéshēng men)
2. 办公室外面有一个大学的群 (bàngōngshì wàimiàn yǒu yī gè dàxué de qún)
3. 大卫有两自行车 (Dàwèi yǒu liǎng zìxíngchē)
4. 大卫有两个自行车 (Dàwèi yǒu liǎng gè zìxíngchē)
5. 公园有两个狮子 (gōngyuán yǒu liǎng gè shīzi)

Despite HSK levels 3 to 5, Chinese measure words remain challenging for these students, evident in the influence of English on their translations. Furthermore, sentence construction using provided measure words in the second exercise revealed numerous difficulties. Consequently, analyzing these constructed sentences indicates that some students need a deeper understanding of Chinese measure word acquisition, a point further supported by the results analysis.

5.1. Measure word 辆 (liàng)

According to the data analysis, 25% of the learners were unable to use the measure word correctly. The errors made can be traced to their first language, which is English. Since there is no equivalent measure word for 辆 (liàng). In English, we only use “a” and “number.” For example:

I have a car.

I have two cars.

“a” +noun and number +noun

From these two sentences, we cannot see a measure word. ese sentences may work with numbers only, with no measure words. On the contrary, in Chinese, the use of a measure word is a must.

Number + measure + word + noun/verb + number + measure word.

Table 1: Use of measure word 辆 (liàng)

Wrong sentence	1. 大卫有两自行车 (Dàwèi yǒu liǎng zìxíngchē) 2.大卫有两个自行车 (Dàwèi yǒu liǎng gè zìxíngchē)
Correct sentence	大卫有两辆自行车 (Dàwèi yǒu liǎng liàng zìxíngchē) (David has two bicycles.)
Type of error	1． Miss use of a measure word “个” (gè) 2． Error due to omission of the measure word
Error description	When talking about cars in the Chinese language, regardless of the number, we use the measure word 辆 (liàng) and not 个 (gè). English speakers tend to mistake the use of 个

	for “a” while the second sentence is a direct translation of English words to Chinese, hence showing the impact of the first language in second language acquisition.
Error percentage	25%

Liang (2008) posits that Chinese measure words, indicating properties like quantity and shape, form a distinctive part of human language's semiotic system. While a comparative analysis of Chinese and English measure words reveals shared features in classification, function, and word combination, it also highlights key differences. These distinctions include the quantity of such words, their combinatorial possibilities, and how they express the individualization of countable nouns.

Given this background, learners often overlook the importance of the object in question. It is crucial in the Chinese language to use the correct measure word that corresponds to the object’s shape and size, and to avoid using the measure word 个 (gè) indiscriminately for all objects.

5.2. The Measure word 个 (gè)

The Chinese measure word, which is frequently used and sometimes referred to as the “universal measure word,” is often mistakenly equated with the English articles “a” and “an” by Zambian learners due to its prevalence. When unsure, students commonly default to 个 (gè), yet a survey showed only 15% incorrectly used measure words, suggesting successful acquisition despite this tendency. The typical grammatical structure involves the following example: Number + 个(gè) + noun.

a) 八个星期(bā gè xīngqī)　8 weeks

b) 九个人(jiǔ gè rén)　9 persons

c) 五个杯子(wǔ gè bēizi)　5 cups

From the above three phrases, we can observe that although this pattern does not exist in English, learners are still able to use it effectively. The author notes that this may be attributed to the frequent use of measure words in everyday Chinese.

Table 2:　Use of Measure word 个 (gè)

Wrong sentence	1.我爸爸收到了两个镜子(wǒ bàba shōu dào le liǎng gè jìngzi) 2.他们是办公室外的一个群大学生(tāmen shì bàngōngshì wài de yī gè qún dàxuéshēng)
Correct sentence	1. 我爸爸收到了两面镜子(wǒ bàba shōu dào le liǎng miàn jìngzi) 2. 办公室外有一个大学生(bàngōngshì wài yǒu yī gè dàxuéshēng) 3.办公室外面有一群大学生(bàngōngshì wàimiàn yǒu yī qún dàxuéshēng)
Type of error	Redundant and mixed error
Error description	Redundant errors refer to overuse and misuse of the measure used. In Chinese, the measure word for flat objects like mirrors is “面”(miàn), and in the other sentence, we do not put two measure words together. 一个大学生/一群大学生(yī gè dàxuéshēng / yī qún dàxuéshēng) will be perfect.
Error percentage	15%

According to Wang, the difficulties in teaching Chinese measure words do not stem from those

that have similarities in English, but rather from those that lack equivalents in English, such as individual Chinese measure words. He (2003) has also made several suggestions for teaching Chinese measure words to beginners, including not prioritizing individual measure words as the main focus of instruction, utilizing the general measure word 个(gè), and emphasizing nonspecific measure words in the design of teaching materials. Therefore, the author believes that the fact that 85% of learners can use this measure word correctly can be attributed to the practice of introducing and encouraging its use from the beginner level, which helps students become familiar with measure words.

5.3. Measure word 群(qún)

群(qún) is a very important measure word in the Chinese language. The analysis shows that 35.63% of the respondents had challenges constructing and translating sentences or phrases using 群(qún). The author observed that since in both English and Chinese languages, this word can be used as a noun, for example:

I have a WeChat group.

我有一个微信群(wǒ yǒu yī gè wēixìn qún)

It may also be used as a measure word:

There is a group of students.

有一群大学生(yǒu yī qún dàxuéshēng)

Hence, some learners wereweire unsure when to use it as a measure word or a noun. It is also noted that while English has different measure words for groups, Chinese mainly use one measure word 群.

Table 3: Use of Measure word 群(qún)

Wrong sentence	1.办公室外面有一个大学生的群(bàngōngshì wàimiàn yǒu yī gè dà xuéshēng de qún) 2.办公室外面有一群大学生们(bàngōngshì wàimiàn yǒu yī qún dàxué shēng men)
Correct sentence	1.办公室外面有一群大学生(bàngōngshì wàimiàn yǒu yī qún dàxuéshēng) 2.办公室外有一群大学生(bàngōngshì wài yǒu yī qún dàxuéshēng)
Type of Error	Mixed error and wrong grammatical pattern
Error description	These two sentences also show the impact of the first language on second language learning. 一群大学生们(yī qún dàxuéshēng men), learners placed the word 们(men) at the end of nouns in an attempt to express plurality in Chinese. However, in the Chinese language, nouns and verbs do not change form to indicate plurality; instead, it is the number or measure word that conveys the plural meaning. As a result, the students made a grammatical error.
Error percentage	38.63%

Dong and Zheng (2007) identified two types of errors among native English speakers learning Chinese measure words. The first type involves inappropriate matches between Chinese measure words (CMWs) and nouns. This includes the overgeneralization of measure words such as “个 (gè)”,

“位 (wèi)”, “种 (zhōng)”, and “件 (jiàn)”, as well as general mismatches between Chinese measure words and nouns, and errors stemming from the nouns themselves. The second type of error pertains to syntactical mistakes in the application of Chinese measure words, which include redundant Chinese measure words in sentences, mismatches between Chinese measure words and other parts of speech (excluding nouns and verbs), using measure words as nouns, and incorrect word order. Therefore, the author concurs with Dong and Zheng’s conclusions and states that the errors presented in the table are the result of learners’ over-reliance on the measure word “个 (gè)” and syntactical mistakes that may be traced back to English language influences.

5.4. The measure word 只(zhī)

The measure word 只(zhī) is also special in the Chinese language, and it’s also called a universal measure word for animals and objects or items that are words in pairs, for example 手, 腿, 耳朵 (shǒu, tuǐ, ěrduǒ), and so on. Nonetheless, the survey showed that 37.22% of the respondents were unable to properly use the measure word 只(zhī) as shown below.

Table 4: Use of measure word 只 (zhī)

Wrong sentence	1. 动物园有两个狮子 (dòngwùyuán yǒu liǎng gè shīzi) 2. 动物园有两个只狮子 (dòngwùyuán yǒu liǎng gè zhī shīzi)
Correct sentence	动物园有两只狮子 (dòngwùyuán yǒu liǎng zhī shīzi) There are two lions in the zoo.
Type of error	mixed error and misuse of “个” (gè)
Erro description	The students have continued to show the over-dependence of the measure word 个(gè). In Chinese, we have a specific measure word for animals such as lions. Lastly, the students mix the two measure words in one sentence. The writer traces the error from the influence of the English language in the acquisition of the Chinese language by the students.
Error percentage	37.22%

Guo (2008) analyzed the causes of errors made by foreign students in learning measure words from the teaching and learning aspects. According to her study, the errors in the learning and acquisition of Chinese measure words are mainly caused by negative transfer from L1, over-generalization, and learners’ communication strategies. She has concluded that the differences between English and Chinese are the main reason that cause difficulties in learning and acquiring measure words among English-speaking students. The over-generalization of the target language is most common in novice learners, for example, using the so-called general classifier “个 (gè)” to match the nouns for which they do not know the matched classifiers. In the case of communication strategies, L2 learners tend to avoid using measure words when they are not confident in their use.

6. Summary of the results and discussion

This paper examines the influence of learners' first languages on the acquisition of Chinese measure words and the types of errors they make. Therefore, it has revealed that errors learners made were a result of the influence of the learner’s first language, which is English in this case, and

were evident in all four measure words used that were used in this survey. Furthermore, the author noted that the highest errors were recorded from the use of 群 (qún) and 只(zhī), with 35.63% and 37.22%, respectively. The wrong use of these measure words was traced from the omission of the measure word, mixed error, redundant error, and wrong grammatical patterns in these two languages. This is attributed to the fact that English can do without these measure words. This is attributed to the fact that most English patterns or phrases only need numbers and nouns.

The author also noted that, although the study may attribute the errors made to the student's first language, English, it is essential to consider that Zambia teaches seven regional languages at the primary and secondary levels; the impact of the local language was not taken into account. Therefore, the author has outlined some recommendations that may be of great importance for future research in the teaching and learning of the Chinese language in Zambia.

Recommendations

In this article, the author recommends that when teaching Chinese measure words, instructors should bring all measure words present in students' texts to their attention. This approach aims to help students overcome their over-reliance on the measure word 个(gè). Furthermore, teachers need to facilitate students' practice of Chinese measure words in daily conversations and explain their grammatical rules. Instructors can achieve this through continuous observation and by guiding students in their use of measure words. The author notes that the correct application of measure words reflects a student's mastery. Additionally, the author suggests adopting new teaching methods, such as software and apps, cyber sources, and visual arts, to offer students diverse learning avenues and embrace a multi-modal approach. Moreover, the development of Chinese language teaching in Zambia necessitates the ongoing cultivation of local Chinese language teachers. Their understanding of local languages, English, and Chinese positions them to comprehend the potential challenges learners might encounter. The author also advocates for the development of local teaching materials with a stronger focus on Chinese measure words, thereby assisting students in a systematic acquisition of the Chinese language.

Conclusion

The research highlights the difficulty students face with Chinese measure words due to discrepancies between their native languages and Chinese. Consequently, learners often substitute or disregard these words in their writing and translations. The author suggests that instructors should understand students' first languages to better facilitate the acquisition of Chinese measure words. Nevertheless, the research exhibits two notable limitations. Firstly, it overlooked the potential influence of local Zambian languages, such as Bemba and Chichewa, among others. Future studies should examine how these languages affect the learning process. Secondly, the survey employed a

restricted set of measure words, while Mandarin encompasses roughly 45 common ones. Therefore, subsequent research should also explore the diverse characteristics and grammatical structures of a broader range of measure words to improve Chinese language education in Zambia.

Reference

Allen, K. (1977). Classifier. *Language*, *53*(02), 285–311. https://doi.org/10.1353/lan.1977.0043

Dong, Z. & Zheng, Y. (2007). Analysis of Chinese quantifiers by native American and European English speakers in 'Corpus of Chinese Interlanguage'. *International Chinese Language Teaching & Learning Report*, *3*, 38–44.

Dulay, H., Burt, M., and Krashen, S. (1982). *Language Two*. Oxford University Press.

Guo, X. (2008). Analysis on the cause of error made by foreign students in learning Chinese classifiers. *Journal of Changchun Normal University (Humanities and Social Sciences)*, *27*(01), pp. 90–93.

He, J. (2003). *The understanding of measure words*. Beijing Language and Culture University Press.

Ibrahim, A. A. (2017). Research on the acquisition of Chinese grammar by Egyptian students. *Popular Science*, *940*(07), 143. https://doi.org/10.16728/j.cnki.kxdz.2017.07.130.

Liang, X. (2008). Contrastive study on semiotics of measure words between Chinese and English. *Journal of Qingdao University of Science and Technology (Social Sciences)*, *24*(03), 102–106. https://doi.org/10.16800/j.cnki.jqustss.2008.03.023

Liu, J. (2021). Error analysis of measure words in teaching Chinese as a foreign language. *Modern Communication*, (06), 159–161.

Ministry of Education, Zambia. (2013). *Educating Our Future*. Zambia Education Publishing House.

Musona, M. & Mushangwe, H. (2014). An analysis of acquisition of Chinese prepositions by native speakers of Shona. *International Journal of Education and Research*, *2*(02), 1–12. https://www.ijern.com/journal/February-2014/18.pdf

National Language Commission Mandarin Training and Testing Center. (2016). *Implementation guidelines for Putonghua proficiency test (6th edition)*. Commercial Press.

Nurse, D. & Philippson, G. (2006). *The Bantu Languages*. Routledge. https://doi.org/10.4324/9780203987926

Tang, S. (2008). Error analysis of measure word instruction in teaching Chinese as a foreign language. *Jo urnal of Shenyang Normal University (Social Science)*, (02), 105–108. https://doi.org/10.19496/j.cnki.ssxb.2008.02.029

Wang, S. (2016). *A textbook-based study on measure word acquisition in learners of Chinese as a second language*. [Master's thesis]. University of Massachusetts, Amherst. https://doi.org/10.7275/8436936

Wirth, E. A. (2014). *Are we the same in our L1 as we are in our L2?* [Master's thesis]. University of Massachusetts, Amherst. https://doi.org/10.7275/298606

Zhang, H. (2007). Numeral classifiers in Mandarin Chinese. *Journal of East Asian Linguistics*, *16*(01), 43–59. https://doi.org/ 10.1007/s10831-006-9006-9

Zheng, L. (2014). *Measure Words in Learning and Teaching Chinese as a Second Language*. [Doctoral dissertation], The University of Leeds.

Zhong W, Muyunda G. & Cheng J. Epistemological beliefs and conceptions about language teaching and learning: A study of secondary school non-native learners and teachers of Mandarin Chinese in Zambia. *Asian-Pacific Journal of Second & Foreign Language Education*, *6*(10), 1–17. https://doi.org/10.1186/s40862-021-00117-2

Zimmerman, C. B. (1997). Do reading and interactive vocabulary instruction make a difference? An empirical study. *TESOL Quarterly, 31*(01), 121–140. https://doi.org/10.2307/3587978

[Editors: Xinchen TU, Rui ZHOU]